

**Notice of Allowability**

Application No.

09/838,684

Examiner

Binh X Tran

Applicant(s)

WONG ET AL.

Art Unit

1765



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 3-25-2004.
2. ☒ The allowed claim(s) is/are 1-12, 14-24 and 26-32.
3. ☒ The drawings filed on 14 February 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

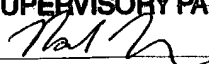
5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 20040513.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

**NADINE G. NORTON**  
**SUPERVISORY PATENT EXAMINER**



### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Kent Chen on 5-7-2004.

2. The application has been amended as follows:

In the claims

In line 1 of claim 14, please replace "The method of claim 13" to --The method of claim 1--.

In 6 of claim 19, (after "by the droplets of the") please replace "phas" with --phase--.

In line 1 of claim 21, please replace "m thod" with --method--.

In line 2 of claim 21, please replace "generat d" with --generated--.

In line 8 of claim 26, (after the phrase "etching the surface") please replacing "remov" with --remove--.

In line 2 of claim 27, (after the phrase "is cooled prior to") please replace "th" with --the--.

In line 1 of claim 28, (after the phrase "the operation of ejecting") please replace "furth r" with --further--.

In line 1 of claim 29, (after the phrase "the operation of ejecting") please replace "furth r" with --further--.

In line 3 of claim 29, (after the phrase "to generate waves in a reservoir of the") please replace "phas" with --phase--.

Remark: It is noted that claims 19, 21, 26-29 were not amended in the response filed on 3-25-2004 according to the claim label (i.e. original or previously presented). However, it appears that applicants inadvertently make a typo-error in re-typing claims 19, 21, 26-29 from previous response.

***Allowable Subject Matter***

3. Claims 1-12, 14-24, 26-32 are allowed.
4. The following is an examiner's statement of reasons for allowance: The cited prior arts fail to disclose or suggest either one of the following steps in conjunction with all other limitation in the claim: while maintaining a surface to be etched below the freezing temperature of a phase changing material, ejecting in liquid form droplets of the phase change masking material in a pattern on the surface to be etched, the droplets changing from a liquid to a solid after contact with the substrate to form a mask; or ejecting in liquid form droplets of the phase change masking material in a pattern on the surface to be etched, the droplets changing from liquid to solid to form a first mask, wherein the surface is maintained at approximately room temperature, and the phase change material is heated prior to the operation of ejection in liquid; or ejecting in liquid form a second plurality of droplets of the second phase change masking material in a second pattern on the second layer; or depositing droplets of a phase change masking material with a freezing point between 50-100 °C in a pattern on the thin film; or exposing the photosensitive material not protected by the phase change material to

ultraviolet light; or maintaining a temperature of a surface to be etched above the boiling point of a liquid carrier, the liquid carrier including a suspended masking material. The prior art Chu teaches to sputter indium film onto a substrate then increase the temperature of the substrate to indium's melting point (156.6 °C) to form a droplets. The indium droplets then change into solid by a cooling process before an etching step.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

#### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh X Tran whose telephone number is (571) 272-1469. The examiner can normally be reached on Monday-Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine G Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Binh X. Tran

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SUPERVISORY PATENT EXAMINER

